

# Theme 4: Technology Transfer and Outreach

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Introduction and Overview



# *NOAA Goals for Weather and Water Services*

*To monitor, enhance and deliver  
environmental information, science  
and services to save lives, protect  
property and support environmental  
stewardship.*

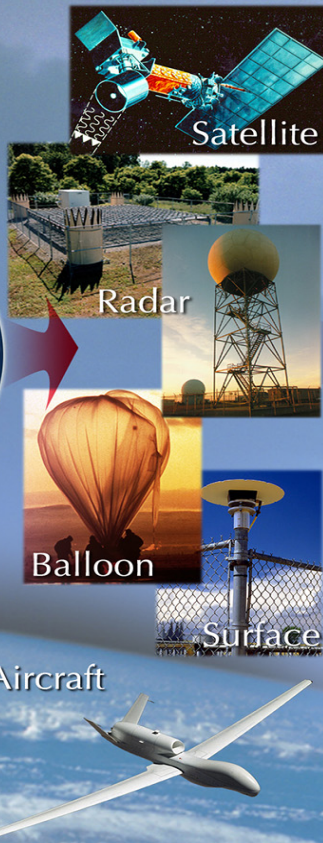






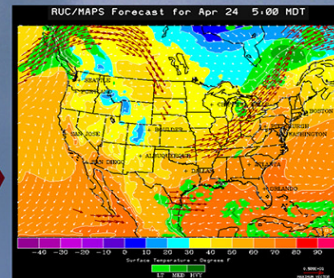
# Global Systems Division

## Observing Systems



## Modeling, Assimilation, & Computing

Assimilate and Model



Advanced Computing



## Information Dissemination

Geophysical Information Systems



Education and Outreach



Public



Transferring science and technology to the  
Nation's weather and climate services





# Technology Transfer

*Why we focus on it*

To Reduce Loss of Life and Property  
To Provide Better Information to the  
Public and Private Weather  
Enterprise  
To Provide more valuable information  
for decision support







# Technology Transfer

*Supports NOAA Strategic Objectives  
for Weather and Water Services*

## **Transformational Science**

Improves the predictability of hazardous weather events

## **Transformational Technology**

Increases the application and accessibility of weather and water information for NOAA's partners

## **Transformational Outreach and Education**

Enhances environmental literacy, and improve the understanding, value of weather and water information



# Components of Technology Transfer

## Identifying Transferrable Science and Technology

### R&D

Advanced  
Observing Systems

Validated Model  
Physics Research  
and Data Assimilation  
Improvements

Industry advances in  
Information Systems  
and computing

Requirements  
for essential  
weather Information  
improvements.

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### Operations

NOAA:  
NWS, NCEP

NOAA Partners:  
DOI, DOE, DOD,  
Universities, Private  
Sector

International Agencies

The Public and  
State and Local  
Agencies

### Assessing Impacts

Observation  
Impacts on NWP

NWP Accuracy

Technology  
Effectiveness in  
Operations

Services  
Improvements

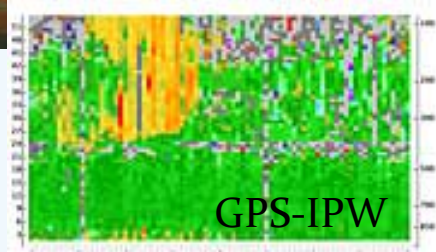
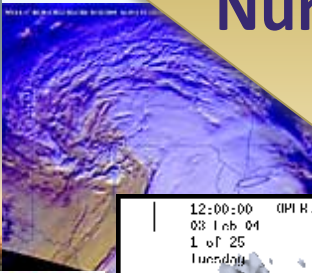


# Transformational Science

## Observing Systems

## Data Assimilation

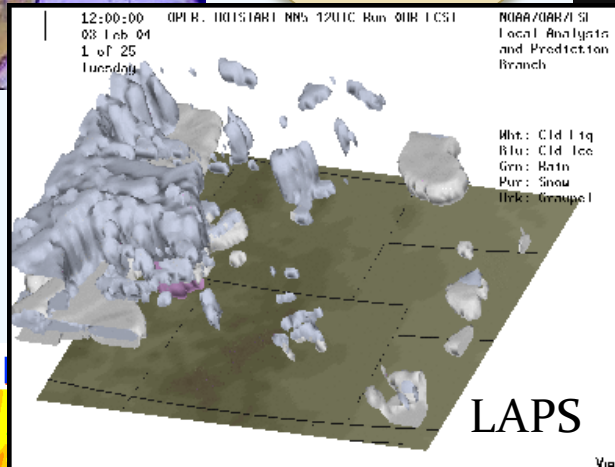
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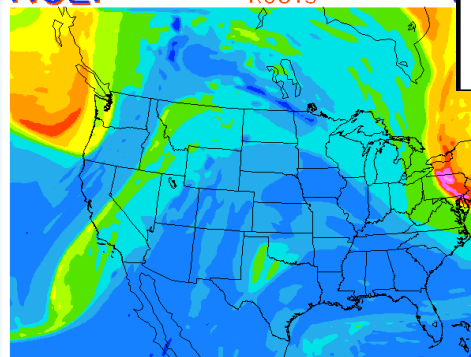
GPS-IPW

NCEP

Operational  
RUC13

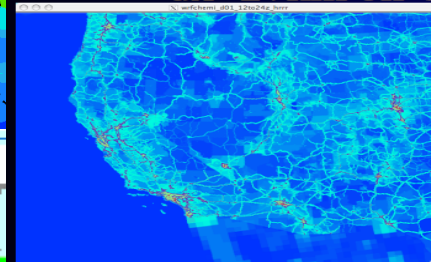


National Oceanic and  
Meteorological  
Administration



RUC  
MAPS

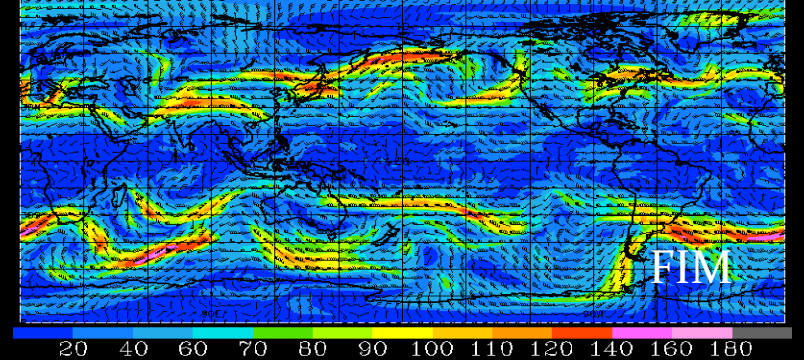
WRF/Chem real-time forecast  
wildfires:  
dx=27km on CONUS



dx=27km  
CZ

EXPEN FIM-8\_C 11/05/2009 (00:00) 120 hr test

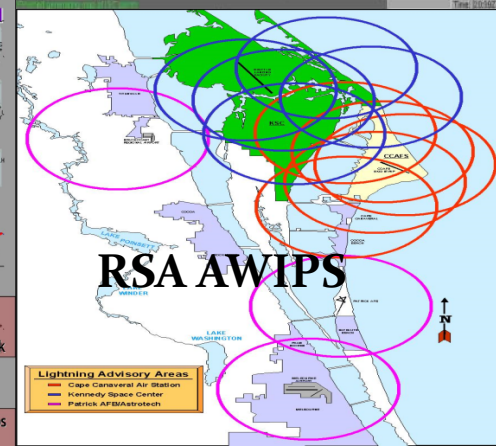
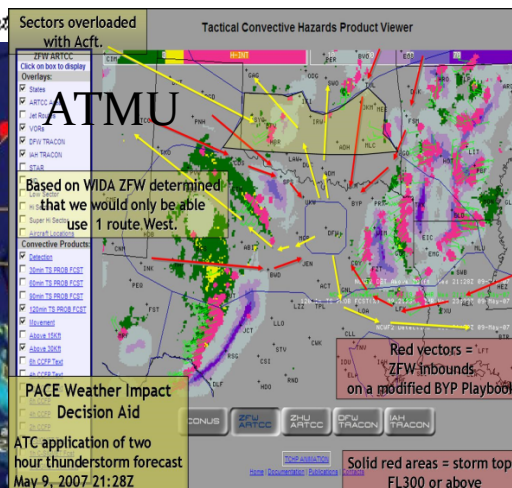
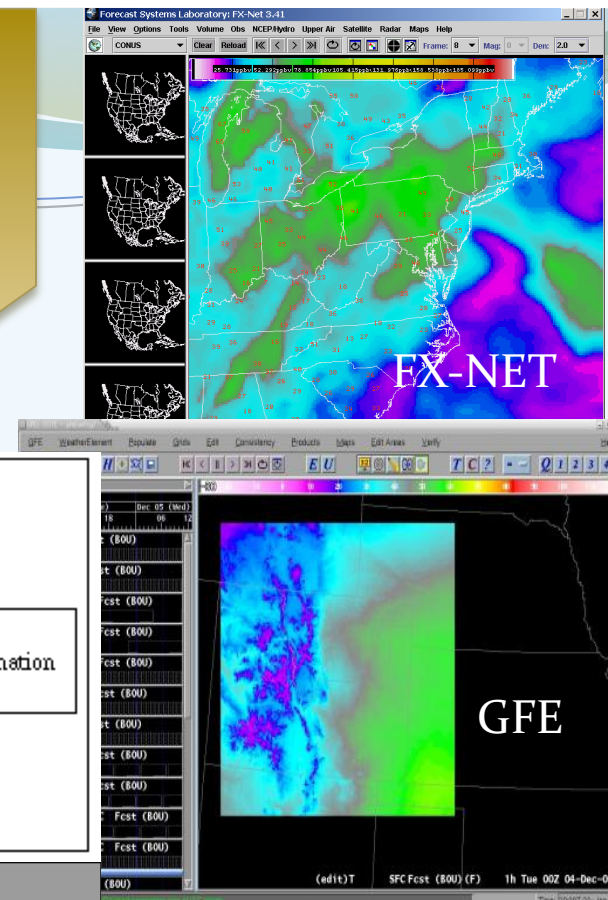
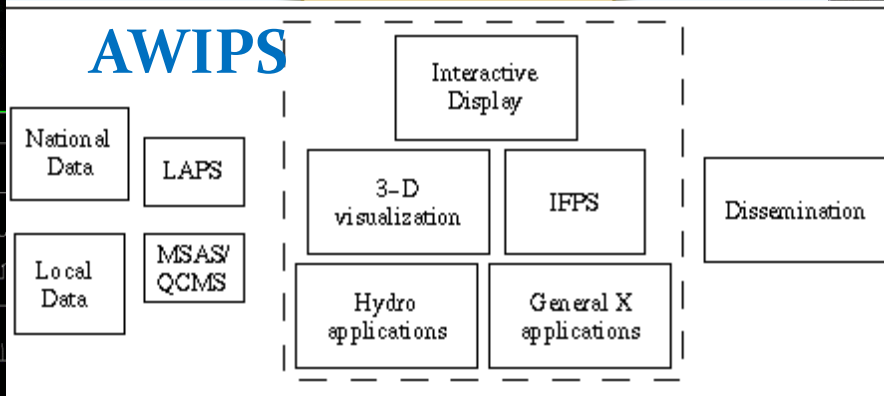
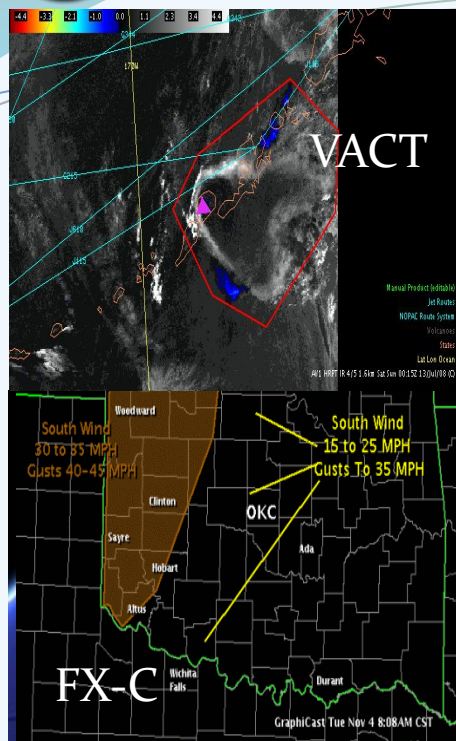
Valid 11/10/2009 00:00 UTC  
250mb Wind (kt)







# Technology Information Systems Decision Support Verification & Techniques





What's been Transferred  
Local and Remote Workstations  
Numerical Weather Prediction  
Real-Time Verification  
Observing Systems  
Data assimilation



Homeland  
Security



中央氣象局  
Central Weather Bureau



[www.epa.gov/airnow](http://www.epa.gov/airnow)



FINNISH METEOROLOGICAL INSTITUTE



National Interagency Fire Center



United States Department of Agriculture



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FINNISH METEOROLOGICAL INSTITUTE



National Interagency Fire Center



United States Department of Agriculture







# Technology Transfer Mechanisms

- Close collaboration with the user community to discover science and service gaps
- Program planning to describe what research can do to fill the gaps
- Use established Technology Transition Processes to transition to operational applications:
  - Memo of Understanding
  - OSIP (Operations and Services Improvement Process)
  - User, Stakeholder and Partner collaborations
  - Operational Evaluation





# Research to Operations

